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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,480	04/15/2005	Kenichiro Nakajima	Q72653	9084
23373 7590 02/25/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER SHEEHAN, JOHN P				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
02/25/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/531,480

**Applicant(s)**

NAKAJIMA, KENICHIRO

**Examiner**

John P. Sheehan

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-22 is/are pending in the application.
- 4a) Of the above claim(s) 13-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-12 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/88)  
Paper No(s)/Mail Date 02/03/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Entry of the Amendment Submitted February 3, 2009***

1. Applicants are advised that the amendment after the Final Rejection submitted February 3, 2009 has been entered.

***Status of the Rejections Made in the Office Action Mailed November 3, 2008***

2. All of the rejections set forth in the Final Rejection mailed November 3, 2008 have been withdrawn in view of applicants' response submitted February 3, 2009.

***Allowable Subject Matter***

3. The indicated allowability of claims 3 to 7 is withdrawn in view of the reference to Kogure et al. (US Patent Application Publication No. 2004/0079446, cited in the IDS submitted February 3, 2009). Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 to 7 and 23 are rejected under 35 U.S.C. 103(a) as obvious over Kogure et al. (Kogure '446, US Patent Application Publication No. 2004/0079446 cited in the IDS submitted February 3, 2009).

Kogure '446 teaches a rare earth containing alloy having a composition that overlaps the alloy composition recited in claims 3 to 12 and 23 (paragraphs 0011 to 0012). Kogure '446 discloses that the alloy is made by rapidly cooling a melt of the alloy at a cooling rate of  $1 \times 10^2$  to  $1 \times 10^8$  °C (paragraph 0016) which overlap the cooling rate recited in claims 3 and 5. Kogure '446 teaches rapidly cooling the molten alloy by strip casting (paragraph 0061) in an inert atmosphere (paragraph 00500) at a pressure of 100 Pka or less (paragraph 0054) which overlaps the strip casting and atmospheric conditions recited in claims 3 and 23. Kogure '446 teaches that the cast alloy has a thickness of 0.01 to 0.3 mm (paragraph 0017) which overlaps the alloy thickness recited in claim 4. Kogure '446 teaches heat treating the rapidly solidified alloy at a temperature of about 400 to 1200 °C (paragraph 0012) which encompasses the heat treatment temperature recited in claims 5 to 7. The heating is for a time of 1 second to 100 hours (paragraph 0012) which encompasses the heat treatment times recited in claims 6 and 7. Kogure '446's alloy contains at least 70 vol. % of an  $\text{NaZn}_{13}$  phase which overlaps claims 5 and 9 and 10.

The claims and Kogure '446 differ in that Kogure '446 does not teach the exact same alloy composition nor the exact same process operating conditions recited in applicants' claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because prima facie case of obviousness exists when the ranges of a claimed invention overlap the ranges disclosed in the prior art. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

6. Claims 8 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Kogure et al. (Kogure '446, US Patent Application Publication 2004/0079446 cited in the IDS submitted February 3, 2009) and Fukamichi et al. (Fukamichi '855, US Patent Publication No. 2004/0194855, cited in the IDS submitted April 15, 2005).

Kogure '446 teaches and is applied as set forth above.

Fukamichi '855 teaches a rare earth containing alloy having a composition which overlaps the alloy composition recited in the instant claims (paragraphs 0024 to 0031). Fukamichi '855 teaches that the alloy is made by atomization, that is, rapid solidification (paragraph paragraphs 0037 to 0041) and possesses the NaZn<sub>13</sub> crystal structure (paragraph 0019).

The claims and the references differ in that the references are silent with respect to the crystal structure recited in claim 9 and the proportion of the  $\text{NaZn}_{13}$  phase recited in claim 10.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloys taught by the references have compositions that overlap the alloy composition recited in the instant claims and therefore is considered to establish a prima facie case of obviousness. In re Malagari, 182 USPQ 549 and MPEP 2144.05. Further, in view of the fact that the alloys taught by the references are made by a rapid solidification process which is similar to, if not the same as, applicants' process of making the instantly claimed alloy, the alloys taught by the references would be expected to possess all the same properties as recited in the instant claims. In re Best, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

### ***Response to Arguments***

7. Applicant's amendments and arguments with respect to the rejections of the claims in view of each of Buschow '535 and Fujita et al. are persuasive. The claims are now rejected as set forth above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (7:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Sheehan/  
Primary Examiner, Art Unit 1793

JPS